1. (Currently Amended) An integrated fuel cell and integrated circuit device, comprising:

a semiconductor substrate;

a fuel cell, located on the semiconductor substrate and comprising

a first electrode and a second electrode configured to define a reaction region, where one of the first and the second electrodes is a cathode and the other is an anode;

a catalytic layer that is permeable at least to protons and is configured to permit catalytic activity, the layer positioned between the first electrode and the second electrode;

a ~~fuel~~ reservoir containing fuel ~~delivery device configured to provide fuel, the fuel delivery device positioned~~ on a side of the first electrode; and

a reactant delivery device configured to provide a reactant, where the reactant reacts with protons from the fuel to generate current, the reactant delivery device positioned on the side of the second electrode;

where the fuel is integrated into the material of at least one of the first electrode and an adjacent layer.

2. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, where the fuel delivery device further comprises a contacted material that is treated with the fuel.

3. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, where the fuel delivery device further comprises palladium.

4. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, where hydrogen is integrated into the fuel delivery device as the fuel.

5. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, where the reactant delivery device further comprises a space surrounding at least one of the second electrode and space surrounding the reaction region.

6. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, further comprising an electrical circuit.

7. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 6, where the electrical circuit comprises a CMOS circuit.

8. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, further comprising a control device for controlling at least one of a current flow and an energy infeed.

9. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, further comprising a control device to at least one of activate an electrochemical reaction between the electrodes and complete an electrical circuit through the electrodes.

10. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 9, where the control device further comprises a closed closure device, wherein the space around a reaction region of the reactant has no reactant, and wherein reactant from an external space enters the reaction region by opening the closure device.

11. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, where the fuel cell is configured as a replaceable module.

12. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 1, further comprising a fuel sensor that is positioned in at least one of the fuel delivery device and the reaction region between protons and the reactant, the fuel sensor configured to determine an available amount of fuel.

13. (Previously Presented) A method for manufacturing an integrated fuel cell and integrated circuit device, comprising:

positioning a proton-permeable layer between a first electrode and a second electrode, the proton-permeable layer configured to permit catalytic activity;

configuring a fuel delivery device as an integral part of one of the electrodes; and

treating a material of the fuel delivery device with fuel.

14. (Currently Amended) An integrated fuel cell and integrated circuit device, comprising:

a semiconductor substrate;

a fuel cell, located on the semiconductor substrate and comprising

a first electrode and a second electrode configured to define a reaction region, where one of the first and the second electrodes is a cathode and the other is an anode;

a catalytic layer that is permeable at least to protons and is configured to permit catalytic activity, the layer positioned between the first electrode and the second electrode;

a reservoir containing fuel ~~fuel delivery device configured to provide fuel, the fuel delivery device positioned~~ on a side of the first electrode; and

a reactant delivery device configured to provide a reactant, where the reactant reacts with protons from the fuel to generate current, the reactant delivery positioned on the side of the second electrode;

where the reactant for generating a quantity of current is integrated into the material of at least one of the second electrode and an adjacent layer, and the fuel is integrated into the first electrode;

where only reactant from the reservoir ~~reactant delivery device~~ can react with the fuel.

15. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 14, where the reactant delivery device further comprises a contacted material that is treated with the reactant.

16. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 14, where oxygen is integrated into the reactant delivery device.

17. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 14, further comprising a CMOS electrical circuit electrically coupled to at least one of the electrodes.

18. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 17, further comprising a control device for controlling at least one of a flow of current and an infeed of energy.

19. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 17, further comprising a control device for at least one of activating an electrochemical reaction between the electrodes and completing an electrical circuit through the electrodes.

20. (Previously Presented) The integrated fuel cell and integrated circuit device according to claim 19, where the control device further comprises a closed closure device, wherein space around the reaction region has no fuel, and wherein fuel from an external space enters the reaction region by opening the closure device.

21. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 17, wherein the fuel cell is configured as a replaceable module.

22. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 21, further comprising a reactant sensor that is positioned in at least one of the reactant delivery device and the reaction region, the reactant sensor configured to determine an available amount of reactant.

23. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 21, further comprising a circuit for at least one of measuring the resistance of one of the fuel delivery device and the reactant delivery device, and determining the remaining amount of one of fuel and reactant.

24. (Cancelled)

25. (Previously Presented) The integrated fuel cell and integrated circuit device of claim 21, further comprising a measuring device configured to determine at least one of a current and a voltage generated by a reaction between the fuel and the reactant.